

REMARKS

Reconsideration and allowance of the present patent application based on the foregoing amendments and following remarks are respectfully requested.

By this Amendment, claims 40, 41, 49, 84, 117 and 126 are amended and claim 116 is cancelled without prejudice or disclaimer to the subject matter therein. Support for the amendments to the claims may be found throughout the original detailed description of the present patent application. No new matter has been added. Accordingly, after entry of this Amendment, claims 40-42, 48-49, 84, 86, 88, 92-98, 117 and 126 will be pending in the patent application.

Claims 40, 49, 84, 86 and 93-98 were rejected under 35 U.S.C. §102(b) based on Togino (U.S. Pat. No. 5,513,041). The rejection is respectfully traversed.

Claim 40 recites an optical apparatus comprising an optical system that forms a two-dimensional image, the optical system comprising a variable optical-property mirror, and a driving circuit that drives the variable optical-property mirror, wherein the variable optical-property mirror is arranged to be decentered from a light-incident-side optical axis, and wherein the variable optical-property mirror has a reflecting surface that is deformable.

Despite the Office Action's assertions, there is absolutely nothing in Togino that remotely discloses, teaches or suggests *each and every limitation* of claim 40, including the features identified above. Applicant wishes to remind the Examiner that "the identical invention must be shown in as complete detail as is contained in the ... claim." (See MPEP §2131, citing Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989), emphasis added). MPEP §2131 also indicates that "the elements must be arranged as required by the claim." (See MPEP §2131, citing In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990), emphasis added). The Office Action does not meet these requirements. Applicant respectfully submits that the Office Action's bases for the rejection are woefully inadequate as they appear to ignore the claim language on its face.

For example, the Office Action continues to insist that Togino discloses that the mirror 3 has a reflecting surface that is deformable. (See page 2 of the Office Action). Specifically, the Office Action asserts that "the mirror is known to have a reflecting surface (shown reflecting light)" and "the mirror with a reflecting surface is deformable." (See page 8 of the Office Action). Applicant strenuously disagrees.

The word “deformable” is defined as moveable so as to be changed in shape. (See Merriam Webster Dictionary). Clearly, the mirror 3 of Togino is unable to be changed in shape. On the contrary, the reflecting surface of the mirror 3 of Togino has a *non-deformable* U shape. The Examiner must realize that the mere fact that the mirror 3 has a U shape does not, in and of itself, prove that the mirror has a reflecting surface that is deformable. Thus, for at least this reason, claim 3 is patentable over Togino.

Equally important is the fact that Togino fails to disclose, teach or suggest a driving circuit that drives the variable optical-property mirror, as recited in claim 40. Togino merely discloses a decentered concave mirror 3 but fails to remotely disclose a driving circuit that drives the decentered concave mirror 3. Therefore, for this additional reason, claim 3 is patentable over Togino.

Claims 93-97 are patentable over Togino at least by virtue of their dependency from claim 40 and for the additional features recited therein.

Claim 49 is patentable over Togino for at least similar reasons as provided above for claim 40, and for the features recited therein. Namely, claim 49 is patentable over Togino at least because this claim recites an optical system comprising, *inter alia*, “a variable optical-property mirror; a driving circuit that drives the variable optical-property mirror; ...wherein a shape of a reflecting surface of the variable optical-property mirror is deformable.” As mentioned previously, Togino fails to disclose, teach or suggest these features.

Claim 84 is patentable over Togino at least because this claim recites an optical device comprising, *inter alia*, “a variable optical-property element having a light-deflecting function and a driving circuit that drives the variable optical-property element.” Togino fails to disclose, teach or suggest these features.

The Examiner refers to element 14 of Togino as allegedly disclosing, teaching or suggesting the variable optical property element of claim 84. However, unlike claim 84, the element 14 of Togino merely relates to a two-dimensional image display device. (See, e.g., col. 11, lines 7-8 of Togino). Element 14 does not have a light-deflecting function as required by claim 84. Accordingly, Togino cannot anticipate claim 84.

Furthermore, unlike claim 84, Togino fails to disclose, teach or suggest a driving circuit that drives the variable optical-property mirror. Thus, for this additional reason, Togino cannot anticipate claim 84.

Claim 86 is patentable over Togino at least by virtue of its dependency from claim 84 and for the additional features recited therein.

Claim 98 is patentable over Togino at least by virtue of its dependency from claim 41 and for the additional features recited therein. **Claim 41 has not been rejected by the Examiner based on Togino. Thus, claim 98 is allowable.** In addition, claim 98 is patentable over Togino at least because this claim recites an optical system comprising, *inter alia*, a variable optical-property element. Togino fails to disclose, teach or suggest these features.

The Examiner refers to mirror 3 of Togino as allegedly disclosing, teaching or suggesting a variable optical-property mirror. However, as noted previously, the concave mirror is not a variable optical mirror. The mirror 3 of Togino does not change its optical property. Therefore, claim 98 cannot be anticipated by Togino.

Accordingly, reconsideration and withdrawal of the rejection of claims 40, 49, 84, 86 and 93-98 under 35 U.S.C. §102(b) based on Togino are respectfully requested.

Claims 41, 88, 116 and 117 were rejected under 35 U.S.C. §102(b) based on Gobeli (U.S. Pat. No. 4,932,768). The rejection is respectfully traversed.

Claim 116 is cancelled without prejudice or disclaimer to the subject matter therein, thus rendering moot the rejection of claim 116.

Claim 41 is patentable over Gobeli at least because this claim recites an optical system comprising, *inter alia*, a variable optical-property element and a plurality of rotationally asymmetric curved surfaces wherein the variable optical-property element and the plurality of rotationally asymmetric curved surfaces are arranged along a single traveling path of rays at positions different from one another. Gobeli does not disclose, teach or suggest these features.

By way of review, Gobeli discloses in Figure 8 an optical system including a collimating mirror 68, a focusing mirror 70 and a diffracting grating 72. The collimating mirror 68 and the focusing mirror 70 are toric mirrors. (See, e.g., column 7, lines 43-45 of Gobeli). The toric mirror is supposed to be an element having a deformable surface shape (See, e.g., column 9, lines 44-60 of Gobeli).

Thus, in Gobeli, the surface of the collimating mirror 68 is both “a variable optical-property mirror” and “a rotationally asymmetric curved surface”. Similarly, the surface of the focusing mirror 70 is both “a variable optical-property mirror” and “a rotationally asymmetric curved surface”. As a result, Gobeli fails to disclose that a variable optical-property mirror (68 or 70) and a plurality of rotationally asymmetric curved surfaces (68 and 70) are arranged along a single traveling path of rays at positions different from one another.

In addition, even if the diffraction grating 72 of Gobeli was unreasonably construed somehow as a rotationally asymmetric surface, Gobeli would merely disclose only one rotationally asymmetric surface, i.e. the surface of the diffraction grating. The surface of the diffraction grating clearly does not include a plurality of rotationally asymmetric surfaces, much less a plurality of rotationally asymmetric curved surfaces, as required by claim 41. The Examiner must realize that the arranged ridges and furrows of the surface 12 do not define a plurality of rotationally asymmetric curved surfaces.

For at least these reasons, it is respectfully submitted that claim 41 is not anticipated by Gobeli.

Claim 88 is patentable over Gobeli at least by virtue of its dependency from claim 41, and for the additional features recited therein.

Claim 117 is patentable over Gobeli at least because this claim recites an optical system wherein, *inter alia*, “the rotationally asymmetric optical surface is a smooth surface directed toward a light-incident side.” Gobeli does not disclose, teach or suggest these features.

Gobeli discloses in Figure 8 an optical system including a collimating mirror 68, a focusing mirror 70 and a diffracting grating 72. The Office Action identifies the diffracting grating 72 of Gobeli as the rotationally asymmetric optical surface recited in claim 117. However, as shown in Figures 8-10 of Gobeli, the only surface that is directed toward a light incident-side in the diffracting grating 72, is the undulated surface of the grating. In so doing, Gobeli fails to disclose a rotationally asymmetric optical surface having a smooth surface directed toward a light-incident side. Accordingly, claim 117 is not anticipated by Gobeli.

Accordingly, reconsideration and withdrawal of the rejection of claims 41, 88, 116 and 117 under 35 U.S.C. §102(b) based on Gobeli are respectfully requested.

Claim 126 was rejected under 35 U.S.C. §102(b) based on Stein (U.S. Pat. No. 3,666,881). The rejection is respectfully traversed.

Claim 126 recites an optical unit wherein, *inter alia*, “at least one of the entrance surface and the exit surface of the transparent optical element is a curved surface.”

Despite the Office Action’s assertions, there is absolutely nothing in Stein that remotely discloses, teaches or suggests *each and every limitation* of claim 126, including the features identified above.

By way of review, Stein merely discloses a multilayer liquid crystal cell structure 10A. The multilayer liquid crystal cell structure 10A of Stein includes transparent plates 12 and 14. However, Stein discloses that the outside surfaces of the transparent plates 12 and 14, that is, the entrance surface and the exit surface of the structure 10A are plane surfaces. In so doing, Stein fails to disclose that at least one of the entrance surface and the exit surface of the transparent optical element is a curved surface. Accordingly, claim 126 is not anticipated by Stein.

Accordingly, reconsideration and withdrawal of the rejection of claim 126 under 35 U.S.C. §102(b) based on Stein are respectfully requested.

Claims 42, 48 and 98 were rejected under 35 U.S.C. §103(a) based on Gobeli in view of Shen *et al.* (U.S. Pat. No. 5,198,653) (hereinafter "Shen"). The rejection is respectfully traversed.

Claims 42, 48 and 98 are patentable over Gobeli at least by virtue of their dependency from claim 41 and for the additional features recited therein. For example, claims 42, 48 and 98 are patentable over Gobeli at least because these claims recite an optical system comprising, *inter alia*, "a variable optical-property element and a plurality of rotationally asymmetric curved surfaces wherein the variable optical-property element and the plurality of rotationally asymmetric curved surfaces are arranged along a single traveling path of rays at positions different from one another."

Shen fails to remedy the deficiencies of Gobeli. Shen was merely cited by the Office Action as allegedly disclosing a sensor. Therefore, any reasonable combination of Gobeli and Shen cannot result, in any way, in the inventions of claims 42, 48 and 98.

Accordingly, reconsideration and withdrawal of the rejection of claims 42, 48 and 98 under 35 U.S.C. §103(a) based on Gobeli in view of Shen are respectfully requested.

Claims 42, 48, 92 and 98 were rejected under 35 U.S.C. §103(a) based on Togino in view of Shen *et al.* (U.S. Pat. No. 5,198,653) (hereinafter "Shen"). The rejection is respectfully traversed.

Claim 92 is patentable over Togino at least by virtue of its dependency from claim 40 and for the additional features recited therein. For example, claim 92 is patentable over Togino at least because this claim recites an optical apparatus comprising an optical system that forms a two-dimensional image, the optical system comprising a variable optical-property mirror, and a driving circuit that drives the variable optical-property mirror, wherein the variable optical-property mirror is arranged to be decentered from a light-incident-side

optical axis, and wherein the variable optical-property mirror has a reflecting surface that is deformable. As mentioned previously, Togino fails to disclose these features.

Shen fails to remedy the deficiencies of Togino. Shen was merely cited by the Office Action as allegedly disclosing a sensor. Therefore, any reasonable combination of Togino and Shen cannot result, in any way, in the inventions of claim 92.

Claims 42, 48 and 98 are patentable over Togino, Shen and a combination thereof at least by virtue of their dependency from claim 41 and for the additional features recited therein. Specifically, claims 42, 48 and 98 depend from claim 41, which has not been rejected based on Togino. As such, claims 42, 48 and 98 are patentable over Togino. For example, claims 42, 48 and 98 are patentable over Togino, Shen and a combination thereof at least because these claims recite an optical system comprising, *inter alia*, “a variable optical-property element and a plurality of rotationally asymmetric curved surfaces wherein the variable optical-property element and the plurality of rotationally asymmetric curved surfaces are arranged along a single traveling path of rays at positions different from one another.” As stated previously, Togino, Shen and a combination thereof fail to disclose a variable optical-property mirror or any other variable optical-property element.

Accordingly, reconsideration and withdrawal of the rejection of claims 42, 48, 92 and 98 under 35 U.S.C. §103(a) based on Togino in view of Shen are respectfully requested.

Applicant has addressed the Examiner’s rejections and respectfully submits that the application is in condition for allowance. A notice to that effect is earnestly solicited.

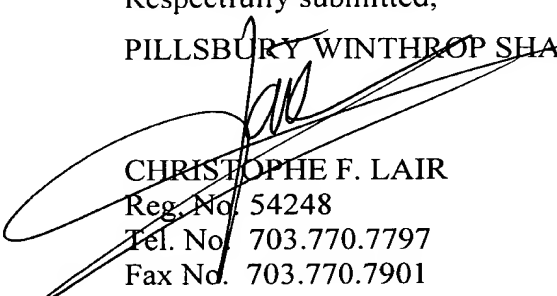
If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

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Respectfully submitted,

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